

3-1 (23) $2A + 4M + N + 3X + Y \rightarrow Z$

(A) $\frac{20g A}{10g A} \frac{1 \text{ mole } A}{2 \text{ mole } A} \frac{1 \text{ mole } Z}{1 \text{ mole } A} = 1 \text{ mole } Z$

(M) $\frac{30g M}{20g M} \frac{1 \text{ mole } M}{4 \text{ mole } M} \frac{1 \text{ mole } Z}{1 \text{ mole } M} = 0.375 \text{ mole } Z$

(N) $\frac{30g N}{15g N} \frac{1 \text{ mole } N}{1 \text{ mole } N} \frac{1 \text{ mole } Z}{1 \text{ mole } N} = 2 \text{ mole } Z$

(X) $\frac{40g X}{30g X} \frac{1 \text{ mole } X}{3 \text{ mole } X} \frac{1 \text{ mole } Z}{1 \text{ mole } X} = 0.4 \text{ mole } Z$

(Y) $\frac{90g Y}{45g Y} \frac{1 \text{ mole } Y}{1 \text{ mole } Y} \frac{1 \text{ mole } Z}{1 \text{ mole } Y} = 2 \text{ mole } Z$

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(24) $Ru_3(CO)_{12} + 9 AsF_3 \rightarrow 3 Ru(CO)_2(AsF_3)_3 + 6CO$

(Given) $\Rightarrow 1 : 9 : 3 : 6$

2 mole $\quad 24 \text{ mole}$

Mole Ratio $\frac{9:3}{1:3} \rightarrow 8$

$1:3 \rightarrow 6$ LP

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② % Comp US % yield.

parts per hundred
pph

$\frac{\text{PART}}{\text{Whole}} \times 100$

$\frac{\text{What we get (experiment)}}{\text{Supposed to get (Math)}} \times 100$

$\text{CHCl}_3 + \text{Cl}_2 \rightarrow \text{CCl}_4 + \text{HCl}$

11.9g \rightarrow 12.6g

11.9g CHCl ₃	1 mole CHCl ₃	1 mole CCl ₄	152g CCl ₄	= 15.33g
11.9g CHCl₃	1 mole CHCl₃	1 mole CCl₄	152g CCl₄	

% Yield = $\frac{12.6}{15.33} \times 100 = 82.2\%$

% Error = $\frac{\text{Act} - \text{Exp}}{\text{ACT}} = \frac{15.3 - 12.6}{15.3} = 17.7\%$

Sep 26-8:09 AM

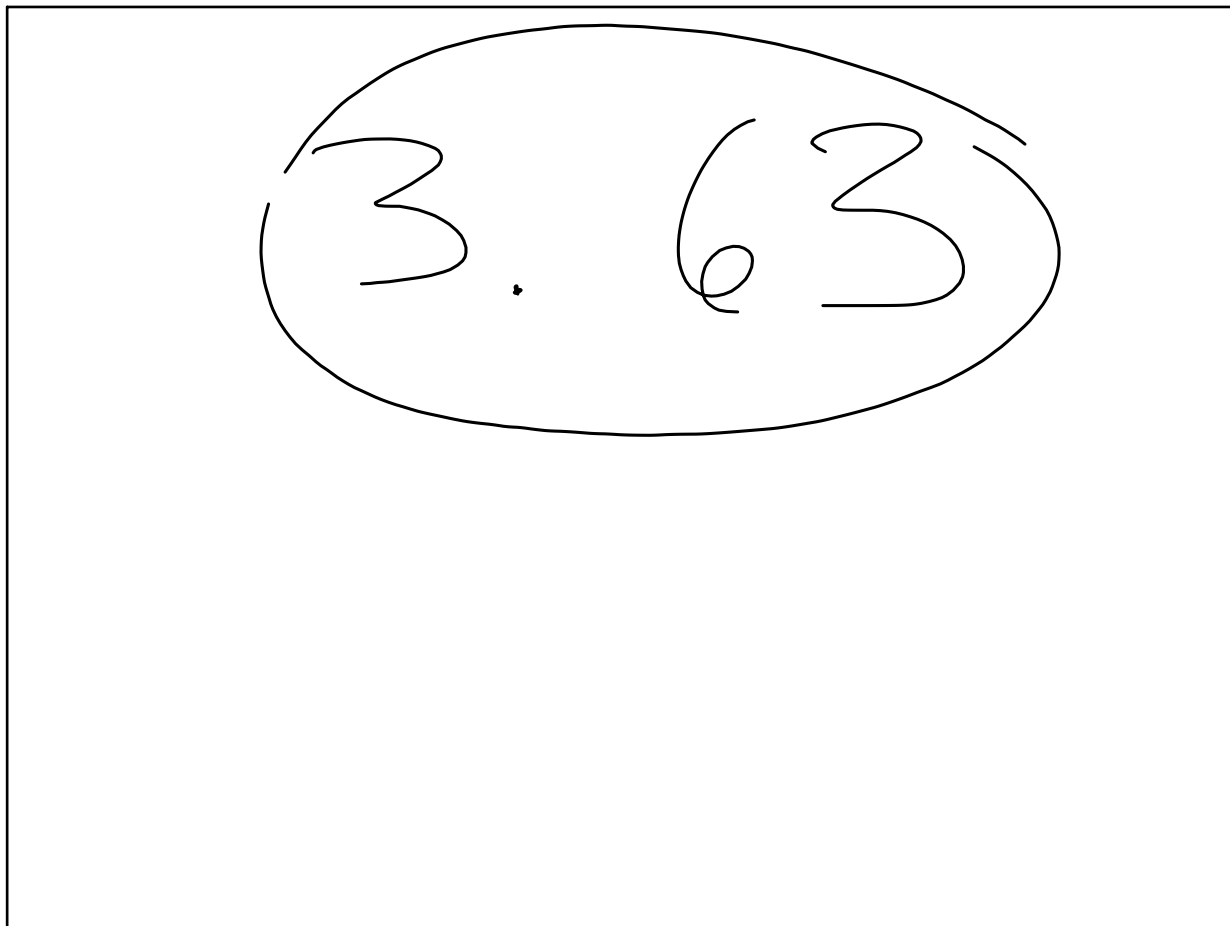
3-2

⑭ $\frac{1.4g \text{ Ar}}{L} = \frac{\text{atoms Ar}}{L}$

Given

1.4g Ar	1 mole Ar	6×10^{23} atoms Ar
1.4g Ar	40g Ar	1 mole Ar

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Sep 26-9:17 AM